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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,105

12/23/2004

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EXAMINER

ARCIERO, ADAM A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/10/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,105	<b>Applicant(s)</b> YOSHITAKE ET AL.	
	<b>Examiner</b> ADAM A. ARCIERO	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 27 and 30-55 is/are pending in the application.
- 4a) Of the above claim(s) 34-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27, 30-33 and 53-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1795

**FUEL CELL, ELECTRODE FOR FUEL CELL AND METHOD PRODUCING THEM**

Examiner: Adam Arciero

S.N. 10/519,105

Art Unit: 1795

April 9, 2009

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 06, 2009 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**DETAILED ACTION**

3. The Applicant's amendment filed on March 06, 2009 was received. Claim 27 was amended. Claims 28-29 were cancelled. Claims 34-52 remain withdrawn. Claims 53-55 are newly added.

***Claim Rejections - 35 USC § 102***

4. The claim rejections under 35 U.S.C. 102(b) as being anticipated by NOBUAKI on claims 27-32 are withdrawn, because Applicant has amended the claims.

***Claim Rejections - 35 USC § 103***

5. The claim rejections under 35 U.S.C. 103(a) as being unpatentable over NOBUAKI and VAIDYANATHAN on claim 33 is withdrawn, because Applicant has amended independent claim 27.

6. Claims 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over NOBUAKI (JP 2002-056863 A) in view of WILLIAMS et al. (US 4,835,071).

As to Claims 27 and 28, NOBUAKI discloses a fuel cell provided with a conductor film which intervenes between two electrodes (hydrogen and oxygen electrodes), each electrode has a charge collector arranged at the outside surface of said electrodes (paragraph [0001]). The hydrogen electrode **103** is a carbon electrode with a catalyst layer on one side and a hydrogen pole charge collector **106** as a conductor connected to the opposite side of the hydrogen electrode **103** (paragraph [0003]). Said hydrogen electrode and corresponding current collector are bonded by a first electroconductive glue layer (paragraph [0007]). NOBUAKI does not specifically disclose wherein a carbide layer is formed at an interface between the electrode substrate and said current collector.

However, WILLIAMS et al. teaches of an electrode having a nickel current collector bonded to said electrode (col. 6, lines 28-67 and Claim 6). WILLIAMS et al. do not specifically disclose a carbide layer formed at an interface of the electrode and current collector. However, it is the position of the Examiner that such a carbide layer is inherently formed, given that both NOBUAKI and WILLIAMS et al. and the present application utilize the same materials and structure for an electrode and a similar method for applying the current collector to the electrode.

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A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. *In re Robertson*, 49 USPQ2d 1949 (1999).

Alternatively, it would have been obvious to one of ordinary skill in the art to apply the current collector to the electrode by a brazing means because WILLIAMS et al. suggests that a strong and permanent bond will be formed (col. 6, lines 28-67).

As to Claims 29 and 30, NOBUAKI teaches the charge collector of claim 2, comprising a gold-plated nickel material (paragraph [0010]). The gold-plated nickel material of the current collector comprises elements (nickel and gold) capable of making carbide.

As to Claims 31 and 32, NOBUAKI teaches the charge collector of claim 1 comprising a gold-plated nickel material (metal plate) (paragraph [0010]).

As to Claims 53-54, it is noted that claims 53-54 are product-by-process claims. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claims is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since NOBUAKI and WILLIAMS et al.'s electrode is similar to that of the Applicant's, Applicant's processes are not given patentable weight in these claims.

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7. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over NOBUAKI (JP 2002-056863 and WILLIAMS et al. (US 4,835,071) as applied to claims 27, 30-32 and 53-54 above, and further in view of VAIDYANATHAN (US 4,585,711).

As to Claim 33, NOBUAKI does not expressly disclose the electrode used for a fuel cell as set forth in claim 27, wherein said current-collector has a thickness in the range of  $0.05 \leq x \leq 1$  mm. However, VAIDYANATHAN teaches an electrode used for a fuel cell comprising a current collector. Said current collector has a final thickness of 75 microns corresponding to 0.075 mm. This thickness falls directly within the claimed range of  $0.05 \leq x \leq 1$  mm.

According to MPEP 2144.05 [R-5], the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists [*In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)].

8. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over NOBUAKI (JP 2002-056863 and WILLIAMS et al. (US 4,835,071) as applied to claims 27, 30-32 and 53-54 above, and further in view of HAMPDEN-SMITH et al. (US 2002/0107140 A1).

As to Claim 55, HAMPDEN-SMITH et al. teaches that a current collector for a fuel cell may be fabricated from nickel or silver, more preferably silver (pg. 20, [0302]). The courts have held that, because HAMPDEN-SMITH et al. teaches of a current collector which may be nickel or silver and NOBUAKI teaches a nickel current collector, it would have been *prima facie* obvious to substitute one metal collector for the other, and the results would be reasonably predictable. See KSR, MPEP 2141, III.

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***Response to Arguments***

9. Applicant's arguments with respect to claims 27, 30-33 and 53-55 have been considered but are moot in view of the new ground(s) of rejection as necessitated by Applicant's amendments.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM A. ARCIERO whose telephone number is (571)270-5116. The examiner can normally be reached on Monday to Friday 8am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795